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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* TSUYOSHI KATAYAMA, MASAKAZU OKUMURA,  
NOBUAKI HATTORI, MAKOTO NAKAJIMA  
and OSAMU KIMURA

---

Appeal 2007-4123  
Application 09/604,763  
Technology Center 1600

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Oral Argument: 05 December 2007  
Decided: 22 January 2008

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*Before:* FRED E. McKELVEY, *Senior Administrative Patent Judge*,  
and ADRIENE LEPIANE HANLON and MARK NAGUMO,  
*Administrative Patent Judges.*

Opinion for the Board filed by *Senior Administrative Patent Judge*  
McKELVEY.

**DECISION ON APPEAL**

1

2     **A. Statement of the case**

3     Tsuyoshi Katayama, Masakazu Okumura, Nobuaki Hattori, Makoto  
4 Nakajima, and Osamu Kimura (hereafter "**Fine Chemical**") seek review

1 under 35 U.S.C. § 134(a) of a final rejection of claims 17-29 and 33 as being  
2 unpatentable under 35 U.S.C. § 103 over the prior art.

3 We have jurisdiction under 35 U.S.C. § 6(b).

4 The application on appeal was filed on 26 June 2000.

5 Fine Chemical claims benefit of an earlier filing date based on  
6 Japanese patent application 11-181497, filed 28 June 1999.

7 The real party in interest is Nippon Fine Chemical Co., Ltd. (Fine  
8 Chemical).

9 The Examiner rejected claims 17-20, 22-29, and 33 under 35 U.S.C.  
10 § 103(a) as being unpatentable over Ansmann and Akrongold. (The reader  
11 should know that no references to *et al.* are made in this opinion.)

12 The Examiner has also rejected claim 21 under 35 U.S.C. § 103(a)  
13 over Ansmann, Akrongold, and Bernhardt.

14 The following specific prior art was relied upon by the Examiner.

15	<u>Name</u>	<u>Patent Number</u>	<u>Issue Date</u>
16			
17	Akrongold	US 3,846,550	05 Nov. 1974
18	Bernhardt	US 4,788,054	29 Nov. 1988
19	Ansmann	US 5,795,978	18 Aug. 1998

20  
21 Ansmann, Akrongold, and Bernhardt are prior art under 35 U.S.C.  
22 § 102(b).

23 We also call attention to:

24	Harrison	US 2,731,481	17 Jan. 1956
25	Kojima	WO98/08888	05 Mar. 1998

26 Harrison and Kojima are prior art under 35 U.S.C. § 102(b).

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**B. Record on appeal**

3

In deciding this appeal, we have considered only the following documents:

5

1. Specification, including original claims.

6

2. Final Rejection entered 04 June 2003 (Paper 19)

7

3. Appeal Brief filed 06 January 2004

8

4. Examiner's Answer entered 06 May 2004

9

5. Reply Brief filed 06 July 2004

10

6. Examiner's transmittal to the Board entered 19 July 2007

11

7. PTO bibliographic data sheet for the application on appeal

12

8. Ansmann

13

9. Akrongold

14

10. Bernhardt

15

11. Kojima

16

12. Harrison

17

13. *Hawley's Condensed Chemical Dictionary*, page 583

18(12th ed. 1993)

19

14. Evidence presented by Fine Chemical:

20

a. Ansmann, U.S. Patent 6,264,961 B1

21

b. Ansmann, U.S. Patent 6,235,702 B1

22

c. Ansmann, U.S. Patent 6,033,652

23

d. Schrader, U.S. Patent 5,981,452

24

e. Brunelle, U.S. Patent 5,231,161

25

f. Igarashi, U.S. Patent 5,576,408

26

g. Obiols, U.S. Patent 5,880,299

5

1 h. Baumöeller, U.S. Patent 5,888,487

2 i. Ansmann, U.S. Patent 5,939,081

3 j. Wachter, U.S. patent 5,962,663

4 k. 1 *International Cosmetics Ingredient Dictionary*  
5488-489, 521-522 (5th ed. 1993).

6 **C. Issues**

7 Two issues are raised by the Appeal Brief.

8 The first issue is whether Fine Chemicals has sustained its burden of  
9 showing that the Examiner erred in rejecting claims 17-20, 22-29, and 33 on  
10 appeal as being unpatentable under 35 U.S.C. § 103(a) over Ansmann '978  
11 and Akrongold.

12 The second issue is whether Fine Chemicals has sustained its burden  
13 of showing that the Examiner erred in rejecting claim 21 on appeal as being  
14 unpatentable under 35 U.S.C. § 103(a) over Ansmann '978, Akrongold and  
15 Bernhardt.

16 We do not reach the first issue with respect to claim 17 and 22-29.  
17 Instead, we entered a new ground of rejection of claims 17 and 22-29 as  
18 being indefinite within the meaning of the second paragraph of 35 U.S.C.  
19 § 112.

20

21 **D. Findings of fact**

22 The following findings of fact are believed to be supported by a  
23 preponderance of the evidence. To the extent that a finding of fact is a  
24 conclusion of law, it may be treated as such. Additional findings as  
25 necessary may appear in the Discussion portion of the opinion.

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The invention

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The invention described in the specification relates to (1) "oil materials" comprising (a) an ester of "dimerdiol" with a monocarboxylic acid having 4 to 34 carbon atoms or (b) an ester of a dimerdiol with a dicarboxylic acid and (2) cosmetics and external agents comprising either dimerdiol ester. Specification 1:5-9; 2:15-21.

The claims on appeal are limited to the cosmetics and external agent portion of the invention.

According to the specification, "[t]he dimerdiols and/or esters thereof for producing the dimerdiol carboxylate and oils comprising the ester of the present invention are known." Specification 2:24-26.

Fine Chemicals has the following to say about "dimerdiols."  
Specification 3:1 through 4:21 [material in brackets added]:

A dimer acid [which is not a dimer diol] is a known dibasic acid obtainable by an intermolecular polymerization reaction of an unsaturated fatty acid, and the industrial production process thereof is approximately standardized in the art. For example, [1] a dimer acid and/or a lower alcohol ester thereof can be obtained by dimerization of an unsaturated fatty acid having 11 to 22 carbon atoms and/or [2] a lower alcohol ester thereof with a clay catalyst.

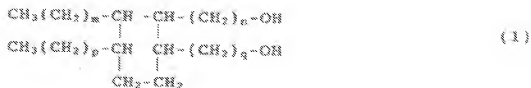
An industrially obtainable dimer acid is mainly composed of a dibasic acid having about 36 carbon atoms. It also contains a trimer acid and monomer acid in any amount depending on the degree of purification. In general, those in

which the content of a dimer acid is over 70 wt% and those in which the content of a dimer acid has been increased to 90% or more are commercially available. Further, those which oxidation stability has been improved by hydrogenation of double bonds remaining after the dimerization reaction are also commercially available. In the present invention, any of dimer acids thus commercially available ... can be used.

An industrially obtainable dimerdiol contains other component[s], for example, a trimer triol, monoalcohol, and ether compound[s], depending on the degree of purification of a dimer acid and/or a lower alcohol ester thereof used as a raw material. In general, those in which the content of a dimerdiol is over 70% wt% can be used in the present invention, although a high purity dimerdiol, such as a dimerdiol in which its content is over 90 wt%, is preferable.

A dimerdiol produced by hydrogenating a dimer acid obtained by dimerization of an unsaturated fatty acid having 11 to 22 carbon atoms with a clay catalyst usually contains 70 to 100 wt% of a diol component. It is considered that the dimerdiol mainly contains compounds represented by the following structural formula 1 and/or structural formula 2:

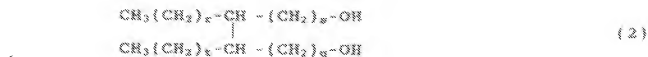
Formula 1 is reproduced below:



11  
1

2                   Formula 1 represents dimerdiol compounds  
3                   wherein, each of m, n, p and q independently represents an  
4                   integer and m+n+p+q is from 14 to 36;

5                   Formula 2 is reproduced below:



7                   Formula 2 represents dimerdiol compounds  
8                   wherein, each of r, s, t and u independently represents an  
9                   integer and r+s+t+u from 18 to 40.

10

11           With respect to the monocarboxylic acid, Fine Chemicals tells us that  
12the monocarboxylic acid used in the invention is not particularly restricted  
13providing it has 4 to 34 carbon atoms, preferably 10 to 32 carbon atoms.  
14Specification 4:22-24.

15           Numerous examples of suitable monocarboxylic acids are set out in  
16the specification. Specification 4:24 through 6:14. Examples include  
17(1) butanoic acid [having four carbon atoms], (2) oleic acid [having 18  
18carbon atoms and one double bond], (3) linoleic acid [having 18 carbon  
19atoms and 2 double bonds], (4) linolenic acid [having 18 carbon atoms and  
203 double bonds], (5) abietic acid [having 20 carbon atoms, a ring structure  
21and 2 double bonds in the ring structure], (6) hydrogenated rosin and  
22(7) rosin.

23           According to *The Merck Index*, page 1422 (12th ed. 1996), rosin is  
24made up of about 90% resin acids and 10% neutral matter. Of the resin  
25acids about 90% are isomeric with abietic acid (C<sub>20</sub>H<sub>30</sub>O<sub>2</sub>); the other 10% is a



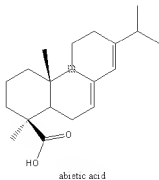
13

1 mixture of dihydroabietic acid ( $C_{20}H_{32}O_2$ ) and dehydroabietic acid

2 ( $C_{20}H_{28}O_2$ ). Abietic acid has the structure:

3 The structure of abietic acid is shown below:

4



5

6

7 Synthesis Example 1 in the specification describes the preparation of a  
8 dimerdiol from a mixture of methyl oleate [the methyl ester of oleic acid]  
9 and methyl linoleate [the methyl ester of linoleic acid]. A dimerization  
10 reaction was said to have been conducted for 6 hours using activated clay to  
11 thereby obtain an intermediate product. The dimerdiol is obtained by  
12 hydrogenation of the intermediate product under 250 atmospheres of  
13 hydrogen at 250 °C in the presence of a catalyst. The dimerdiol is said to  
14 have an acid value of 0.2 and a hydroxyl value of 196.0. Specification 21:26  
15 through 22:17.

16 Example 1 describes the preparation of a hydrogenated rosin  
17 dimerdiol ester made by reacting hydrogenated rosin with the dimerdiol  
18 prepared in Synthesis Example 1.

19 Example 5 describes the preparation of an ester made from the  
20 dimerdiol PESPOL HP-1000 which is said to be manufactured by Toagosei

15

1 Co., Ltd. Specification 24:20. According to WO98/08888, published  
205 March 1998, page 3:7-12:

3                   Dimer diol is a saturated aliphatic diol having 36 carbon  
4                   atoms prepared by a complete hydrogenation of dimer acid.  
5                   The dimer acid used as a starting material is obtained by  
6                   dimerization, with heating, of unsaturated fatty acid having 18  
7                   carbon atoms such as oleic acid or linoleic acid. For example,  
8                   commercially-available products such as Pespol HP-1000  
9                   which is sold from Tagosei Co., Ltd., may be used as the dimer  
10                  diol.

11

Claims on appeal

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Claims 17-20, 22-29, and 33 are on appeal.

13

Independent claim 29 reads:

14

29. A cosmetic or an external agent comprising a dimerdiol  
15                  ester of a monocarboxylic acid having 10 to 32 carbon atoms  
16                  and/or a dimerdiol ester of a dicarboxylic acid.

17

18

Independent claim 33 reads:

19

33. A cosmetic or an external agent comprising a dimerdiol  
20                  ester of a monocarboxylic acid selected from the group  
21                  consisting of:

22

i)     linear saturated acids having 4 to 34 carbon atoms,

23

ii)    branched fatty acids having 4 to 34 carbon atoms,

24

iii)   linear unsaturated acids having 10 to 32 carbon atoms,

25

iv)    hydroxy acids having 4 to 34 carbon atoms and

17

1           v)     cyclic acids having 4 to 34 carbon atoms, selected from  
2           the group consisting of cyclohexanoic acid, hydrogenated rosin,  
3           rosin, abietic acid, hydrogenated abietic acid, benzoic acid,  
4           p-oxybenzoic acid, p-aminobenzoic acid, salicylic acid, gallic  
5           acid, pyrrolidonecarboxylic acid and nicotinic acid; and/or a  
6           dimerdiol ester of a dicarboxylic acid, and  
7           wherein said dimerdiol is a dimerdiol produced by  
8           hydrogenating a dimer acid obtained by dimerization of an  
9           unsaturated fatty acid having 11 to 22 carbon atoms.

10       Dependent claims 18 and 21 read:

11           18. The cosmetic or an external agent according to claim 33,  
12           wherein the dimerdiol ester is of a monocarboxylic acid having  
13           10 to 32 carbon atoms.

14

15           21. The cosmetic or an external agent according to claim 18,  
16           wherein the monocarboxylic acid comprises a rosin or a  
17           hydrogenated rosin.

18

19

Ansmann '978

20

Ansmann '978 relates to "emulsifiers." Col. 1:12.

21

The problem said to be addressed by the Ansmann invention is to  
22 provide emulsifiers which enable more stable, but at the same time  
23 sensorially lighter products to be produced with a reduced quantity of waxes.  
24 Col. 1:31-35.

19

1 The Ansmann emulsifiers may be used as skin-care formulations in a  
2 variety of cosmetics, including day creams, night creams and body lotions.  
3 Col. 5:41-43.

4 The Ansmann emulsifier comprises at least two essential ingredients  
5 as well as other optional ingredients. Col. 1:40-47.

6 A first ingredient is an alkyl and/or alkenyl oligoglycoside.  
7 Col. 1:41-42.

8 A second ingredient is a fatty alcohol. Col. 1:44-45.

9 The fatty alcohols include "technical dimerdiols and trimetriols  
10 containing 18 to 36 or 18 to 54 carbon atoms which emanate from the  
11 oligomerization and subsequent hydrogenation of unsaturated fatty acids."  
12 Col. 3:13-16.

13 The emulsifiers are suitable for the production of emulsions of the o/w  
14 [oil in water] type. Col. 4:40-41.

15 Suitable oils include esters of linear and/or branched fatty acids with  
16 polyhydric alcohols (for example dimer diol or trimer diol). Col. 4:40-41.

17 The oil can make up 5-99 weight %, preferably 10-75 w%, of the  
18 non-aqueous part of the emulsion.

19 Akrongold

20 We find it unnecessary to discuss Akrongold since it does not discuss  
21 "dimerdiols."

22 Bernhardt

23 Bernhardt describes "thickeners" (a viscosity modifier) which can be  
24 added to sunscreen compositions. One thickener is described as being the  
25 reaction products of rosin and a polyhydric alcohol. Co. 8:56-67.

21

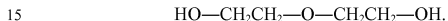
1 Fine Chemical contention with respect to dimer diol

2 One of Fine Chemical's principal contentions in this appeal is  
3(App. Br. 5):

4 that "dimer diol" and "trimer diol" discussed at column 4,  
5 line 49 of Ansmann '978 are different compounds from  
6 "dimerdiol" as used in the present invention, because Ansmann  
7 '978 defines "dimerdiol and "trimertriol" in its column 3,  
8 lines 14-17 as compounds containing 18 to 36 or 18 to 54  
9 carbon atoms obtained from the oligomerization and subsequent  
10 hydrogenation of unsaturated fatty acids.

11 Fine Chemical goes on to say (App. Br. 5):

12 Moreover, it appears that a "dimer diol" as used in Ansmann  
13 [978] is represented by the formula HO—Ar—O—Ar—OH,  
14 wherein Ar is ethylene, *i.e.*:



16 Ansmann '978 reveals the following at col. 3:14-17:

17 technical dimerdiols and trimertriols containing 18 to 36 or 18  
18 to 54 carbon atoms which emanate from oligomerization and  
19 subsequent hydrogenation of unsaturated fatty acids.

20 What is a "dimer diol"?

21 (1)

22 An "oligomer" is "[a] polymer molecule consisting of only a few  
23monomer units (dimer, trimer, tetramer). *Hawley's Condensed Chemical*  
24*Dictionary*, page 583 (12th ed. 1993). A "dimer" is "[a]n oligomer whose  
25molecule is composed of two molecules of the same chemical composition."

23

1 *Id.* at 409. A dimer acid is produced by dimerization of unsaturated fatty  
2 acids at mid-molecule and usually contains 36 carbons. *Id.* at 409.

3 Oleic acid has the structural formula (18 carbon atoms):

4 
$$\text{CH}_3(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)_7\text{CO}_2\text{H}$$

5 A dimer acid of oleic acid results from the oligomerization of two  
6 molecules of oleic acid (*i.e.*, two oleic acid molecules are bonded together  
7 through oligomerization and the oligomer has 36 carbon atoms). Possible  
8 chemical structures are described by Harrison (col. 2:38-48). Subsequent  
9 hydrogenation eliminates any double bonds and ultimately yields a dimer  
10 diol having 36 carbon atoms.

11 The process is described by Fine Chemicals. Specification, page 2:24  
12 through page 4:21.

13 A similar process is described by Ansmann '978. Col. 3:14-17  
14 (quoted above).

15 (2)

16 As earlier noted, Ansmann '978 in addition to referring to technical  
17 dimerdiols, also refers to "dimer diols." Col. 4:48.

18 According to Fine Chemical, a "dimer diol" is different from a  
19 technical dimerdiol.

20 At least one prior art document cited by Fine Chemical tends to  
21 confirm the possibility that one skilled in the art would understand that the  
22 term "dimerdiol" has more than one meaning.

23 Brunelle, a patent assigned to The General Electric Company,  
24 describes esters having the following formula:

25 
$$\text{HO}-(\text{—R—O—CO—A—CO—O—})_n\text{—R—OH}$$

25

1where n is about 1 to about 5. Col. 2:30-40.

2 While the formula represents a compound which is an ester (because  
3it contains —O—CO— groups), it is also a dialcohol or a diol because it  
4contains —OH groups on either end.

5 Brunelle reveals that the "bis-esters" are sometimes designated  
6hereinafter "monomer diol" (where n = 1), "dimer diol" (where n = 2), etc.  
7Col. 2:46-48.

8 Consistent with Brunelle, is International Cosmetic Ingredient  
9Dictionary, called to our attention by Fine Chemical, where various esters  
10are described.

11 For example, PEG-2 distearate (described on page 488) is a bis-ester  
12or di-ester of a "diol" having the formula



14The formula represents a dimer diol due to the fact that two (O—CH<sub>2</sub>CH<sub>2</sub>—)  
15groups are present. Fine Chemical tells us that one skilled in the art would  
16understand the diol is a "dimer diol."

17 PEG-3 distearate (described on pages 488-489) is a bis-ester or di-  
18ester of a "diol" (not a triol) having the formula:



20The formula represents a trimer diol due to the fact that three

21(O—CH<sub>2</sub>CH<sub>2</sub>—) groups are present. Fine Chemical tells us that one skilled  
22in the art would understand that the diol is a "trimer diol."

27

1                   Examiner's reliance on Ansmann '978

2           The Examiner rejected all claims on appeal as being unpatentable  
3 under 35 U.S.C. § 103 in one fashion or another over Ansmann '978.

4           The Examiner found that Ansmann '978 describes an emulsifier  
5 suitable for the production of light oil-in-water emulsions that may be used  
6 in the cosmetic formulations. Final Rejection, page 2.

7           The Examiner further found that suitable oils for the emulsions  
8 described by Ansmann '978 include esters of linear and/or branched fatty  
9 acids with polyhydric alcohols, for example *dimer diols*. *Id.* See Ansmann  
10 '978, col. 4:27-28 to which references has been earlier made.

11          The Examiner's finding of a description of a "dimer diol" in Ansmann  
12 '798 forms the underlying basis for the prior art rejections.

13

14           **E. Principles of law**

15          A claim containing language which is indefinite is not patentable.  
16 35 U.S.C. § 112, second paragraph; *General Electric Co. v. Wabash*  
17 *Appliance Corp.*, 304 U.S. 364 (1938); *In re Moore*, 439 F.2d 1232 (CCPA  
18 1971).

19          A rejection based on § 103 should not be reached if the claims are  
20 indefinite within the meaning of 35 U.S.C. § 112. *In re Steele*, 305 F.2d  
21 859, 863 (CCPA 1962). See also *In re Wilson*, 424 F.2d 1382, 1385 (CCPA  
22 1970).

23          Claims are interpreted from the standpoint of a person of ordinary  
24 skill in the relevant art. *In re American Academy of Science Tech Center*,  
25 367 F.3d 1359, 1364 (Fed. Cir. 2004).



29

1 In supporting an obviousness rejection, it can be important to identify  
2a reason that would have prompted a person of ordinary skill in the relevant  
3field to combine prior art elements to arrive at the claimed invention. *KSR*  
4*International Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741 (2007).

5

## 6 **F. Discussion**

### 7 1. Indefiniteness of claims 17 and 22-29

8 During our deliberations in connection with this appeal, we have  
9struggled with the meaning of the term "dimerdiol".

10 The term "dimerdiol" appears in the record in two lexical forms: (1)  
11"dimer diol" (with a space between "dimer" and "diol") and (2) "dimerdiol."  
12We attribute no particular scientific significance to the lexical difference.

13 Independent claim 29 uses the term "dimerdiol."

14 Independent claim 33 also uses the term "dimerdiol" but adds that the  
15"dimerdiol is a dimerdiol produced by hydrogenating a dimer acid obtained  
16by dimerization of an unsaturated fatty acid having 11 to 22 carbon atoms."

17 The "dimerdiol" of claim 29 facially appears to be broader than the  
18dimerdiol of claim 33.

19 The specification describes dimerdiols and indicates that they are  
20known. Specification, page 2:24 through page 4:21.

21 It turns out from the prior art, that dimerdiols are indeed old and that  
22one skilled in the art reasonably could understand that a reference to a  
23"dimerdiol" could be a reference to at least two diols which are different,  
24e.g., those described by Brunelle and those described by WO98/08888. The  
25"dimer diols" (with a space between "dimer" and "diol") described by  
26WO98/08888 appear to be one embodiment of the "dimerdiols" described in

31

1the Specification. Notwithstanding the examples provided in the  
2specification, we cannot read limitations from the specification into the  
3claims. *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571  
4(Fed. Cir. 1988) (“particular embodiments and examples appearing in the  
5specification will not generally be read into the claims.”)

6 Whether a claim is indefinite can be the subject of expensive patent  
7litigation. *See, e.g., IPXI Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d  
81377 (Fed. Cir. 2005); *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d  
91342 (Fed. Cir. 2005); *Genentech Inc. v. Wellcome Foundation Ltd.*, 29 F.3d  
101555 (Fed. Cir. 1994).

11 When indefinite claim language becomes apparent during patent  
12examination, the time to clear up the indefiniteness is before a patent issues.  
13*Cf. Graham v. John Deere Co.*, 383 U.S. 1, 18 (1966) (to await litigation is  
14—for all practical purposes—to debilitate the patent system); *In re Zletz*, 839  
15F.2d 319, 321-22 (Fed. Cir. 1989) (“[d]uring patent examination the pending  
16claims must be interpreted as broadly as their terms reasonably allow. . . .  
17The reason is simply that during patent prosecution when claims can be  
18amended, ambiguities should be recognized, scope and breadth of language  
19explored, and clarification imposed. . . . An essential purpose of patent  
20examination is to fashion claims that are precise, clear, correct, and  
21unambiguous. Only in this way can uncertainties of claim scope be  
22removed, as much as possible, during the administrative process.”). In the  
23case before us, a simple amendment might overcome any indefiniteness and,  
24should a patent issue to Fine Chemical, spare patentees, accused infringers,  
25and Federal courts from the need to guess about, battle over, and resolve the

33

1 meaning of term claims. *See, e.g., Saunders Group, Inc. v. Comfortrac, Inc.*,  
2 2492 F.3d 1326, 1335-36 (Fed. Cir. 2007), where both the Federal Circuit and  
3 the district court struggled with the meaning of claim language.

4 The dimerdiol of claim 29 has no carbon atom limitation.

5 The dimerdiol of claim 33 has a carbon atom limitation by virtue of  
6 the "product by process" language.

7 One possibility for an amendment may be to define "dimerdiol" in  
8 claim 29 as the product obtained by hydrogenating a dimer acid obtained by  
9 dimerization of an unsaturated fatty acid having 11 to 22 carbon atoms.  
10 Specification, page 3:28 through page 4:3.

11 Still another possibility would be an amendment to claim 29 to define  
12 the "dimerdiol" as comprising mainly compounds represented by formula 1  
13 or formula 2. Specification, page 4:4-21.

14 Both possibilities would eliminate from the scope of claim 29 the  
15 Brunelle dimer diols and other prior art dimer diols called to our attention by  
16 Fine Chemical in its brief on appeal. It is our understanding that Fine  
17 Chemical does not intend the claimed term "dimerdiol" to cover the dimer  
18 diols described by Brunelle.

19 2. Obviousness

20 Claim 33 defines the dimerdiol as a dimerdiol produced by  
21 hydrogenating a dimer acid obtained by dimerization of an unsaturated fatty  
22 acid having 11 to 22 carbon atoms. We do not believe that the evidence  
23 relied upon by the Examiner would permit us to find by a preponderance of  
24 the evidence that the dimer diol described by Ansmann (col. 4, line 49) is a  
25 dimerdiol which is the same as a dimerdiol produced by hydrogenating a

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1dimer acid obtained by dimerization of an unsaturated fatty acid having  
211 to 22 carbon atoms. The dimer diol described by Ansmann '978 may or  
3may not be a dimerdiol produced by hydrogenating a dimer acid obtained by  
4dimerization of an unsaturated fatty acid having 11 to 22 carbon atoms.  
5Possibilities and speculation are not sufficient to establish a fact by a  
6preponderance of the evidence. *Central State Hospital v. Wiggers*, 230 Va.  
7157, 159 (1985). For example, inherency cannot be established by a  
8preponderance of the evidence based on evidence that a certain thing *may*  
9result from a given set of circumstances. *Rapoport v. Dement*, 254 F.3d  
101053 (Fed. Cir. 2001). *See also In re Hughes*, 345 F.2d 184 (CCPA 1965)  
11(if a reference is subject to two interpretations, then it is ambiguous and will  
12not support an anticipation rejection).

13        Since a preponderance of the evidence does not support a finding that  
14Ansmann '978 describes a dimerdiol produced by hydrogenating a dimer  
15acid obtained by dimerization of an unsaturated fatty acid having 11 to 22  
16carbon atoms, one of the elements of the invention of claim 33 is not  
17described in the prior art. Accordingly, in this case, there is no basis to  
18support a prior art rejection under §103 based on Ansmann '978, with or  
19without Akrongold.

20        Claim 21 requires the monocarboxylic acid to be a rosin or a  
21hydrogenated rosin. Claim 21 depends indirectly from claim 33 through  
22claim 18. Apart from our discussion concerning claim 33, and assuming  
23arguendo that the Ansmann '978 "dimer diol" is the same as the Fine  
24Chemical dimerdiol, in our view the evidence will not support a finding that  
25one skilled in the art would have had a reason to use the Bernhardt rosin

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1ester in the composition of Ansmann '978. *KSR, supra*. Rather, the use of  
2impermissible hindsight is required to find that one skilled in the art would  
3have reacted rosin with Fine Chemical's dimerdiol. *Cf. In re McLaughlin*,  
4443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971) (obviousness  
5judgments are necessarily based on hindsight; so long as judgment takes into  
6account only knowledge known in the art, there is no error). There is no  
7prior art reason to react rosin with Fine Chemical's dimerdiol.

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### **G. Order**

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Upon consideration of the appeal it is

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ORDERED that the decision of the Examiner rejecting

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claims 17 and 22-29 over the prior art is *vacated*.

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FURTHER ORDERED that we have entered a new rejection of

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claims 17 and 22-29. 37 C.F.R. § 41.50(b) (2007). 35 U.S.C. § 112, second  
15paragraph.

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FURTHER ORDERED that the decision of the Examiner

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rejecting claims 18-21 and 33 over the prior art is *reversed*.

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FURTHER ORDERED that our decision is not a final agency

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action.

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FURTHER ORDERED that within **two (2) months** from the

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date of our decision appellant may further prosecute the application on

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appeal by exercising one of the two following options:

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1. Request that prosecution be reopened by submitting

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an amendment or evidence or both. 37 C.F.R. § 41.50(b)(1) (2006).

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2. Request rehearing on the record presently before the

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Board. 37 C.F.R. § 41.50(b)(2) (2006).

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1           FURTHER ORDERED that no time period for taking any  
2subsequent action in connection with this appeal may be extended under  
337 C.F.R. § 1.136(a)(1)(iv) (2006).

VACATED-IN-PART and REVERSED-IN-PART  
(New rejection under Bd. R. 41.50(b))

sd

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cc (via First Class mail)

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